A METHOD AND ARRANGEMENT FOR CONTROLLING THE TEMPERATURE OF THE OUT STREAM FLOW FROM A HEAT EXCHANGER AND MEASURING PRODUCED HEAT

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The present invention relates to a method and a device for controlling the temperature of at least one outbound secondary flow in a secondary circuit from a heat exchanger through a primary flow in a primary circuit, via a control member which can be affected by a control unit, which member regulates the primary flow. The invention also relates to a method for measuring yielded power and heat quantity.

BACKGROUND OF THE INVENTION AND THE PROBLEM

During delivery of hot tap water in district heating station, a primary flow of centrally heated water, which is conducted into a heat exchanger, where a secondary flow of hot tap water is heated to a constant consuming temperature in the heat exchanger. Control of the constant consuming temperature on the secondary side have been obtained in the district heating station, either through automatic mechanical, or through electronic control devices, which control the temperature on the basis of correction of the difference between desired and actual outbound temperature on the secondary side through feedback temperature measurement from the secondary side. Whenever electronic control devices are used, PI or PID regulators are commonly used, which control the flow on the primary side by, depending on the present outbound temperature on the secondary side, closing or opening a valve on the primary side. Thus, the heating effect on the primary side is regulated, so that the desired outbound temperature on the hot tap water is obtained.

Both the mechanical and the electronic systems exhibit drawbacks, since the control is not as fast as would be desired, whereby there may be a delay before the correct outbound temperature is reached on the secondary side. This entails a lag before the correct temperature is obtained at the tap location of the secondary circuit, and, in the worst case, a risk of scalding.

Another drawback is that an oscillation in the control easily arises, since it is, in practise, impossibly to optimise the regulating equipment with respect to all occurring operating conditions. The conducting temperature and difference pressure of the district